Claims

We claim:

1. A method of providing illumination in coordination with a display screen, comprising:

    providing a source of computer application content for display on a display screen;

    providing an illumination source for illuminating an environment that is related to the display screen; and

    coordinating the illumination source to illuminate the environment in relationship to the computer application content on the display screen.

2. A method of claim 1, further comprising providing a control system for controlling the illumination source to provide illumination of a plurality of colors.

3. A method of claim 1, wherein controlling the illumination source uses the control system in response to a signal obtained from the computer application.

4. A method of claim 3, wherein the application is a computer game.

5. A method of claim 1, wherein the illumination source provides information that is not available through the display screen.

6. A method of claim 1, wherein the environment is selected from the group consisting of an entertainment room, a video game parlor, a home theatre, a dorm room, a bedroom, a computer room, an office, a classroom, a cabana (surround unit), an enclosure, a pod, a wall, a surface, a

phosphor-coated surface, a surface, a vehicle, a car, a plan, a boat, a train, a venue, a store, a theatre, and a mall.

7. A method of claim 1, wherein the environment comprises a surface, and wherein the surface includes an element selected from the group consisting of a work of art, a design, a color, a shape, a graphic design, a photograph and a picture.

8. A method of claim 7, wherein the element is designed to create an animation effect in coordination with changes in illumination.

9. A method of claim 1, wherein the environment is illuminated in coordination with a signal from a computer system located in another environment.

10. A method of claim 1, wherein the control signal is obtained by a method selected from the group consisting of receiving a video signal, extracting information from a pixel on a display screen, deriving a signal from an audio signal, obtaining a signal from an object of a computer application, obtaining a signal from a thread of a computer application, obtaining a signal from a controller for a computer game, obtaining a signal from a wiring system, obtaining a signal from another element of a light system, and obtaining a signal from a wireless connection.

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11. A method of claim 1, wherein the control signal is obtained through code from a computer game and the illumination source is coordinated with events in the computer game.

12.   A method of claim 1, wherein the display screen is selected from the group consisting of

a personal computer screen, a video game parlor game, a laptop computer screen, a television

screen connected to a game console, an internet-enabled device screen, a thin client device

screen, an Internet appliance screen, a simulator, a handheld device, a handheld game unit, a

5   personal digital assistant, and a wireless handheld device.

13.   A method of claim 1, wherein the content is selected from the group consisting of

computer game content, video game content, a television signal, an Internet protocol signal, an

HTTP signal, an HTML instruction, a dynamic HTML instruction, a TCP/IP protocol signal, a

10   parlor game instruction, and a console game instruction.

14.   A method of claim 1, wherein the content is a game and wherein the game is selected

from the group consisting of a war game, a strategy game, a multi-player game, a target shooting

game, a fighting game, and a puzzle.

15.   A method of claim 1, wherein the content is a puzzle game and wherein obtaining a

predetermined configuration of lighting in an environment solves the puzzle.

16.   A method of claim 1, wherein the illumination source is selected from the group

20   consisting of a plurality of light emitting diodes, a plurality of networked light emitting diodes,

and a room light.

17.   A method of claim 16, wherein the illumination source is controlled by a method selected from the group consisting of digital control, analog control, radio control, infrared control, Bluetooth control, pulse-width-modulation, and wireless control.

5   18.   A method of claim 1, wherein the control code for the light system is obtained from a method selected from the group consisting of embedding code in a computer game, embedding code in a software application, embedding code on a disc, delivering code over a network, and delivering the code via a wireless connection.

10   19.   A method of claim 1, wherein illuminating the environment comprises an effect selected from the group consisting of a color-changing effect, a stroboscopic effect, a flashing effect, a coordinated lighting effect, a lighting effect coordinated with a video signal, a lighting effect coordinated with an audio signal, a color wash where the color changes over a period of time, an effect creating an ambient color, a color fading effect, an effect that simulates movement, a color 15   chasing rainbow, a flare streaking across a room, a sun rising, and a plume from an explosion.

20.   A method of claim 1, wherein illuminating the environment creates an effect, and wherein the illumination effect is coordinated with an audio effect.

20   21.   A method of claim 1, wherein illuminating the environment is in coordination with execution of a computer game using the display, and wherein the illumination shows an object outside a viewport of a virtual world depicted by the computer game.

22.   A method of claim 1, further comprising providing a mapping module for mapping a plurality of lights in the environment with a plurality of objects in the content.

23.   A method of claim 22, wherein the content relates to a computer game.

24.   A method of claim 23, further comprising establishing an avatar representative of a character of a computer game and providing light as a characteristic of the avatar.

25.   A method of claim 24, wherein the light characteristic of the avatar relates to at least one of light hue, color, intensity, temperature and saturation.

26.   A method of illuminating the environment of a display screen, comprising:

        Providing an illumination source capable of illuminating an environment with a plurality of colors;

        Providing a control system for controlling the illumination source;

        Configuring the control system to accept a signal related to the content displayed on the display screen.

27.   A method of claim 26, further comprising controlling the illumination source in response to the signal.

28.   A method of claim 27, wherein the content is a computer application.

29.   A method of claim 28, wherein the content is a computer game.

30.   A method of claim 29, wherein the illumination source is a plurality of LEDs.

31. A method of claim 30, wherein the LEDS are addressably disposed on a network.

32. A method of providing a control signal for an illumination source, comprising:

Providing content for a computer application including a display on a computer screen;

Providing a control signal adapted to control an illumination system; and

5   Coordinating the control signal with the content.

33. A method of claim 32, wherein coordinating comprises embedding the illumination control signal in computer code for the display on the computer screen.

34. A method of claim 33, wherein the application is a computer game.

35. A method of claim 34, wherein the application is a solid modeling program.

36. A method of claim 35, wherein the application is a simulation.

37. A method of claim 32, wherein the application is for a computer-based auction.

38. A method of controlling illumination of an environment of a display screen, comprising:

Providing a device for receiving a video-in signal from a content producing device;

Configuring the device to apply an algorithm adapted to control an illumination system in response to a characteristic of the video signal; and

Configuring the device to output an illumination control signal that is adapted to control illumination of the environment in coordination with the content of the display on the display screen.

39. A method of claim 38, further comprising providing a pass-through video out signal to the display screen.

20   the display screen.

40. A method of claim 38, wherein the content producing device is a computer.

41. A method of claim 38, wherein the content producing device is a video game console.

42. A method of coordinating illumination for a network-based computer game, comprising:

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Providing computer game content via a computer network for execution on a computer that is connected to the computer network;

Providing, via the network, an illumination control signal that is adapted to control an illumination system to illuminate the environment in coordination with the computer game content.

43.   A method of claim 42, wherein the control signal is embedded in the executable code for the computer game content.

44.   A method of claim 43, wherein the control signal is a digital signal.

45.   A method of claim 44, wherein the control signal is adapted to control the illumination by pulse-width-modulation.

46.   A method of claim 42, herein the computer game content is for a multi-player game.

47.   A method of claim 42, wherein the illumination control signal instructs the illumination system based on events in the computer game.

48.   A method of claim 42, wherein the illumination control signal instructs the illumination system based on characteristics of objects in the computer game.

49.   A method of claim 48, wherein the computer game content is for a multi-player game, and wherein the illumination control signal controls the illumination system to illuminate an environment of one player in response to an action of a computer of another player.

50.   A method of providing illumination in coordination with a console-based video game, comprising:

Providing a console-based video game having a content control signal that controls content for display on a display screen;

Providing a lighting signal for control of a lighting system; and

Combining the content control signal and the lighting signal to facilitate illumination of the environment of the display screen in coordination with the content displayed on the display screen.

51.   A method of claim 50, wherein the lighting system comprises a plurality of LEDs.

52.   A method of claim 51, wherein the LEDs are disposed in a network.

53.   A method of illumination in a virtual reality environment, comprising:

Providing a display screen for displaying virtual reality content in at least a portion of a virtual reality environment;

Providing a lighting system for illuminating at least a portion of a virtual reality environment; and

Coordinating the illumination with the virtual reality content.

54.   A method of claim 53, wherein the virtual reality environment comprises a training application.

55.   A method of claim 53, wherein the virtual reality environment comprises a game application.

56.   A method of claim 53, wherein the illumination is by control of a network of light emitting diodes of a plurality of colors.

57.   An enhancement for a computer-based auction, comprising:

Providing computer code for executing an auction,

Providing a lighting system for illuminating an environment of a participant in the auction, and

Providing a control system for controlling the lighting system in response to data obtained from the auction.

58. A method of claim 57, further comprising controlling the lights in the environment to provide a change in illumination in response to an event in the auction.

59. A method of claim 58, further comprising changing illumination when the participant wins the auction.

5   60. A method of claim 58, further comprising changing illumination upon occurrence of an event selected from the group consisting of a higher bid, a new bid, approach of the end of the auction, meeting of a reserve bid, winning the auction, and losing the auction.

61. A method of modeling, comprising:

Providing a computer-based representation of for a solid model, the representation

10 including a capability for modeling the effect of lights, and

Providing a controller for a light system, the controller controlling the light system to illuminate a solid model in the real environment in correspondence with modeling illumination of the representation in a virtual environment.

62. A method of claim 61, further comprising providing a light system for illuminating a

15 solid model.

63. A method of claim 62, wherein the light system includes a network of LEDs.

64. A method of claim 63, wherein the LEDs are addressable.

65. A method of simulating an environment, comprising:

Establishing a simulation environment corresponding to an environment of a real world

20 situation,

Providing a lighting system for illuminating the simulated environment, and

Controlling the lighting system to illuminate the simulated environment in a manner corresponding to illumination conditions typical of the real world environment.

66.   A method of claim 65, wherein the environment is an emergency situation, and wherein the lighting system imitates emergency lighting conditions.

67.   A method of teaching music, comprising,

        Providing a music-generating system,

5   Providing a controller for a lighting system,

        Coordinating the control of the lighting system to provide lights that correspond to music played by the music-generating system, and

        Providing feedback to a user of the music-generating system through the light system, to assist in training the user to play music.

10   68. A method of illumination of an environment, comprising:

        Providing a display screen for displaying content of a computer application,

        Providing a lighting system for illuminating an environment of a user of the computer application,

        Providing a surface for receiving illumination for the lighting system, and

15   Coordinating the illumination of the surface with the execution of content of the computer application.

69.   A method of claim 68, further comprising providing an element on the surface that interacts with light from the lighting system to provide an effect.

70.   A method or providing a computer-based game, comprising:

20   providing a plurality of light elements, the light elements comprising objects of a game, and

        providing a controller, for controlling the light elements in coordination to allow playing of the game, the light elements being disposed on a surface in an environment external to the computer.

71. A method of controlling illumination in the environment of a visual display screen, comprising:

    providing an illumination source for producing illumination of a plurality of colors;

    obtaining a signal related to content that is displayed on the display screen;

5   providing a control system for controlling the illumination source; and

    controlling the illumination source to illuminate the environment in coordination with the content displayed on the display screen.

72.   A method of claim 71, wherein the content comprises objects in a computer game.

73.   A method of claim 72, wherein the illumination source comprises an array of LEDs.

10 74.   A method of claim 73, wherein the display screen has a housing and wherein the LEDs are disposed on the housing of the display screen.

75.   A method of claim 74, wherein the network is a wireless network.

76.   A method of claim 71, wherein obtaining the signal comprises obtaining code that is embedded in the code for a computer game.

15 77.   A method of claim 71, wherein obtaining the signal comprises detecting a signal directly from the display screen.

78.   A method of claim 71, wherein obtaining the signal comprises obtaining a video signal through a video in port.

79.   A method of claim 71, wherein the control system delivers a digital signal.

20 80.   A method of claim 79, wherein the control system delivers a pulse-width-modulated signal.

81.   A method of claim 71, wherein the control system delivers an analog signal.

82.   A method of claim 77, further comprising using the control system to control the

illumination source in relation to a game object in the game.

83.   A method of claim 82, wherein the control system controls the illumination source in

coordination with disabling at least one function of the content displayed on the display screen.

84.   A method of claim 83, wherein the display screen is entirely disabled for a period of time

in coordination with control of the illumination source.

85.   A method of claim 83, wherein the game object is an event and the illumination source is

controlled to produce an effect that is related to the event.

86.   A method of claim 85, wherein the event is an explosion and the effect is a flash.

87.   A method of claim 85, wherein the event is a shot and the effect is a flash.

88.   A method of claim 85, wherein the event is success and the effect is a flash.

89.   A method of claim 85, wherein the event is approach of a threat and the effect is a color

change.

90.   A method of claim 85, wherein the event is a change in an object characteristic and the

effect is a color change.

91.   A method of claim 85, wherein the event is movement and the effect is a wash of color.

92.   A method of claim 85, wherein the event is movement and the effect is movement of

color.

93.   A method of claim 70, further comprising providing a library of effects from which a

programmer may select an effect to relate to an event in the game.

94.   A method of claim 93, wherein the library of effects includes effects selected from the

group consisting of color-changing effects, stroboscopic effects, flashing effects, coordinated

lighting effects, lighting effects coordinated with video, lighting effects coordinated with audio,

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color wash effects, changes in hue, changes in saturation, changes in intensity, creating an ambient color, color fading, effects that simulate movement, color chasing rainbows, a flare streaking across a room, a sun rising, and a plume from an explosion.

95.   A method of claim 77, wherein the content is a game that provides a third person view and wherein the lighting system provides illumination that is an extension of the content displayed on the screen.

96.   A method of claim 77, wherein the illumination source is controlled in coordination with a non-game object.

97.   A method of claim 96, wherein the non-game object is selected from the group consisting of the time of day, the end of the work day, the beginning of the work day, the beginning of a lunch period, sunset, sunrise, and an environmental condition.

98.   A method of claim 77, further comprising controlling the illumination source to distract the user of the content.

99.   A method of claim 77, further comprising controlling the illumination source to deter the user of the content.

100.   A method of claim 71, further comprising detecting a condition in the real world environment via the lighting system.

101.   A method of claim 100, further comprising altering the execution of the computer application based on the detection of the real world condition.

102.   A method of claim 71, further comprising providing a surround sound speaker system in proximity to the user of the display screen, wherein the event is movement and the effect is movement of color in coordination with movement of sound in the surround sound speaker system.

103.   A method of claim 71, further comprising a surface located in proximity to the display screen for receiving illumination from the illumination source.

104.   A method of claim 103, wherein the surface comprises an enclosure surrounding the display screen.

5   105.   A method of claim 104, wherein the surface comprises a cabana.

106.   A method of claim 103, wherein the surface comprises a white surface.

107.   A method of claim 103, wherein the surface comprises a graphical element that is adapted to be illuminated by the illumination source.

108.   A method of claim 107, wherein altering the illumination from the illumination source creates an animation effect with the graphical element of the surface.

10   109.   A method of claim 103, wherein the surface comprises a textured surface.

110.   A method of claim 71, further comprising an audio system for producing sound that is related to the content.

111.   A method of claim 110, further comprising controlling the illumination source to illuminate the environment of the display screen in coordination with the sound produced by the audio system.

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112.   A method of claim 111, wherein the audio system comprises speakers and the network of LEDs is disposed in proximity to the speakers.

113.   A method of claim 112, wherein the LEDs are disposed on the speakers.

20   114.   A method of claim 71, wherein the display screen is a first display screen and the environment is a first environment, further comprising

providing a second display screen in a second environment

providing a second illumination source, and

controlling the illumination sources to coordinating illumination of the two environments in conjunction with the content displayed on the first and second display screens.

115. A method of claim 114, further comprising changing illumination in the second environment in coordination with content on the first display screen, wherein the first display

5   screen and the second display screen display content for a multi-user computer game, and wherein the illumination of the first environment and the second environment is coordinated in response to objects in the computer game.

116. A method of claim 115, wherein an event on the first display screen causes an illumination change in the second environment.

10   117. A method of claim 71, further comprising providing a mapping module for mapping a plurality of lights in the environment with a plurality of objects in the content.

118. A method of claim 117, further comprising mapping a plurality of lights in a home to a plurality of lights in a virtual environment depicted on the display.

119. A method of claim 118, further comprising illuminating the house lights in coordination

15   with the virtual lights.

120. A method of claim 71, further comprising a mounting bar for mounting lights of the lighting system.

121. A method of claim 120, further comprising a cabana for surrounding the display screen.

122. A method of claim 121, wherein the cabana is collapsible.

20   123. A method of claim 71, further comprising providing an indicator light that is disposed in proximity to the display.

124. A method of claim 123, further comprising using the indicator to indicate a condition.

125. A method of claim 71, further comprising using data from the real world to influence at least one of an event, an object and an attribute in the virtual world in coordination with control of the lighting system.

126. A method of facilitating illumination control, comprising:

providing a control system for an illumination source;

adapting the control system to receive a signal representative of visual content displayed on a display screen; and

adapting the control system to control the illumination source in coordination with the visual content.

127. A method of claim 126, wherein the display screen is a computer screen.

128. A method of claim 127, wherein the content is computer game content.

129. A method of claim 126, wherein the display screen is a television screen.

130. A system for imparting information using a lighting system, comprising:

a computing device including a video display;

a lighting system in communication with the computing device for producing illumination; and

a software application for dynamically controlling the illumination in response to or in coordination with information presented on the video display so as to impart information to a user.

131. A system of claim 130, wherein the computing device further comprises a game having objects and wherein the system allows for relation of a portion of the lighting system to an object.

132. A system of claim 131, wherein the information provided by the illumination system relates to an attribute of an object.

133.   A system of claim 133, further comprising a second software application.

134.   A system of claim 133, wherein the second software application comprises a game.

135.   A system of claim 130, wherein the lighting system comprises an LED.

136.   A system of claim 130, wherein the lighting system comprises a screen upon which the

5   illumination is projected.

137.   A system of claim 136, wherein the screen is a cabana.

138.   A system of claim 137, wherein the computing device is a video game console.

139.   A system of claim 130, wherein the information provided by the lighting system is

different from the information provided on the video display.

10   140.   A system for controlling a lighting system, comprising:

a lighting system including a lighting fixture, the lighting system in communication with a

computing device; and

a software application including a software object operating in conjunction with the computing

device; wherein, the software application attaches the control of the lighting fixture to the

15   software object.

141.   A system of claim 140, wherein the software application includes a game and the

software object comprises an object in the game.

142.   A system of claim 141, further comprising a library of effects for use with the lighting

system.

20   143.   A screen for use with a lighting system comprising;

a frame designed to be placed in proximity to the user of a computing system, and a material

mounted on the frame, wherein the material is arranged in a manner so as to be able to reflect

illumination produced by a lighting system to the user of the computing system.

144. A system of claim 143, wherein the screen is shaped to form a cabana.

145. A system of claim 143, wherein the screen is shaped to form a portion of a sphere.

146. A system of claim 143, wherein the screen is formed so as to be repeatedly assembled and disassembled.

5   147. A system of claim 143, further comprising a video display, wherein the frame is designed to be placed to at least partially enclose the video display.

148. A system of claim 143, wherein the frame is designed to be placed behind the video display relative to the user.

149. A system of claim 143, wherein the frame is designed to at least partially enclose the computing system and the user.

150. A system of claim 143, further comprising a mounting bar for the attachment of lighting fixtures in proximity to the screen.

151. A system of claim 150, wherein the mounting bar is arranged so that the lighting fixtures have a fixed point of attachment to the mounting bar.

152. A system of claim 150, wherein the mounting bar is arranged so that fixtures have a fixed point of projection onto the screen when attached to the mounting bar.

153. A software application for use on a computing device, comprising:

computer code for generating a computer game on a computing device; and computer code for controlling a lighting system in communication with the computing device.

20   154. A method for visualizing the relative location of virtual objects within a virtual environment, comprising:

having a computing device;

generating a virtual environment on the computing device, the virtual environment containing a plurality of virtual objects;

associating with a virtual object, the illumination from a lighting fixture; and visualizing the relative location of the virtual object by the positioning of the illumination.

5   155.   A method of claim 154, wherein the visualizing includes the position of the illumination corresponding to the position of the lighting fixture.

156.   A method of claim 155, wherein the visualizing includes the position of the illumination corresponding to the position on a surface which is illuminated by the illumination.

157.   A method of claim 156, wherein the position on the surface performs at least one of

10   reflection of the illumination, refraction of the illumination, absorption and reemission of the illumination.

158.   A method for enhancing the play of a computer game comprising:

providing to a user a lighting system;

providing to the user software for controlling the lighting system, the software being capable of

15   interfacing with a computer game; and

allowing the user to use the software to control the lighting system in a manner that enhances the play of the computer game.

159.   A method for providing a lighting system for use with a software application comprising:

providing at least one lighting fixture; and

20   providing a computer application compatible with the software application, the computer application allowing for the software application to provide information to a user through illumination generated by the lighting fixture.

160.   A method of claim 159, wherein the lighting fixture comprises an LED.

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161.   A method of claim 160, wherein the lighting fixture comprises a plurality of networked lighting fixtures.

162.   A method of claim 159, further comprising a mounting apparatus for holding the lighting fixture.

163.   A method of claim 159, further comprising a surface for the reflection of illumination.

164.   A method for allowing a software developer to include control of a lighting system within a software application comprising:

providing to a software developer a lighting system substantially similar to one provided to a user; and

providing to a software developer an interface for allowing the lighting system to communicate with a computing device; wherein the software developer can use the interface to include control for the lighting system within a software application.

165.   A method of claim 164, further comprising providing a library of effects that can be used to generate a particular lighting effect on the lighting system to the software developer.

166.   A method of providing illumination in coordination with a display screen, comprising:

providing a source of computer game content for display on a display screen;

providing an illumination source for illuminating an environment that is related to the display screen;

providing a control system for controlling the illumination source to provide illumination of a plurality of colors;

coordinating the illumination source to illuminate the environment in relationship to the computer game content on the display screen, wherein coordinating the illumination source uses the control system in response to a signal obtained from the computer game.

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167. A method of claim 166, further comprising providing a surface in the environment of the display for accepting illumination from the illumination source.

168. A method of claim 167, wherein the surface comprises an enclosure.

169. A method of claim 168, wherein the enclosure is collapsible and portable.

5 170. A method of claim 167, wherein the surface comprises elements suitable for interacting with the illumination from the illumination source.

171. A method of claim 170, wherein the elements comprise graphical objects related to objects in the computer game.

172. A method of claim 166, further comprising providing a mounting apparatus for the 10 illumination source.

173. A method of claim 172, wherein the mounting apparatus is collapsible.

174. A method of claim 166, wherein the illumination source comprises a plurality of light emitting diodes.

175. A method of claim 174, wherein the light emitting diodes are disposed in a network 15 configuration.

176. A method of claim 175, wherein the light emitting diodes are controlled by pulse width modulation.

177. A system for providing illumination in coordination with a display screen, comprising:

a source of computer application content for display on a display screen;

20 an illumination source for illuminating an environment that is related to the display screen; and

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a control system for coordinating the illumination source in response to a control signal to

illuminate the environment in relationship to the computer application content on the display

screen.

178.   A system of claim 177, further comprising a control system for controlling the

illumination source to provide illumination of a plurality of colors.

179.   A system of claim 178, wherein controlling the illumination source uses the control

system in response to a signal obtained from the computer application.

180.   A system of claim 179, wherein the application is a computer game.

181.   A system of claim 177, wherein the illumination source provides information that is not

available through the display screen.

182.   A system of claim 177, wherein the environment is selected from the group consisting

of an entertainment room, a video game parlor, a home theatre, a dorm room, a bedroom, a

computer room, an office, a classroom, a cabana (surround unit), an enclosure, a pod, a wall, a

surface, a phosphor-coated surface, a surface, a vehicle, a car, a plan, a boat, a train, a venue, a

store, a theatre, and a mall.

183.   A system of claim 177, wherein the environment comprises a surface, and wherein the

surface includes an element selected from the group consisting of a work of art, a design, a color,

a shape, a graphic design, a photograph and a picture.

184.   A system of claim 177, wherein the element is designed to create an animation effect in

coordination with changes in illumination.

185.   A system of claim 177, wherein the environment is illuminated in coordination with a

signal from a computer system located in another environment.

186.   A system of claim 177, wherein the control signal is obtained by a method selected from

the group consisting of receiving a video signal, extracting information from a pixel on a display

screen, deriving a signal from an audio signal, obtaining a signal from an object of a computer

application, obtaining a signal from a thread of a computer application, obtaining a signal from a

5   controller for a computer game, obtaining a signal from a wiring system, obtaining a signal from

another element of a light system, and obtaining a signal from a wireless connection.

187.   A system of claim 177, wherein the control signal is obtained through code from a

computer game and the illumination source is coordinated with events in the computer game.

188.   A system of claim 177, wherein the display screen is selected from the group consisting

10   of a personal computer screen, a video game parlor game, a laptop computer screen, a television

screen connected to a game console, an internet-enabled device screen, a thin client device

screen, an Internet appliance screen, a simulator, a handheld device, a handheld game unit, a

personal digital assistant, and a wireless handheld device.

189.   A system of claim 177, wherein the content is selected from the group consisting of

15   computer game content, video game content, a television signal, an Internet protocol signal, an

HTTP signal, an HTML instruction, a dynamic HTML instruction, a TCP/IP protocol signal, a

parlor game instruction, and a console game instruction.

190.   A system of claim 177, wherein the content is a game and wherein the game is selected

from the group consisting of a war game, a strategy game, a multi-player game, a target shooting

20   game, a fighting game, and a puzzle.

191.   A system of claim 177, wherein the content is a puzzle game and wherein obtaining a

predetermined configuration of lighting in an environment solves the puzzle.

192.   A system of claim 177, wherein the illumination source is selected from the group

consisting of a plurality of light emitting diodes, a plurality of networked light emitting diodes,

and a room light.

193.   A system of claim 177, wherein the illumination source is controlled by a method

selected from the group consisting of digital control, analog control, radio control, infrared

control, Bluetooth control, pulse-width-modulation, and wireless control.

194.   A system of claim 177, wherein the control code for the light system is obtained from a

method selected from the group consisting of embedding code in a computer game, embedding

code in a software application, embedding code on a disc, delivering code over a network, and

delivering the code via a wireless connection.

195.   A system of claim 177, wherein illuminating the environment comprises an effect

selected from the group consisting of a color-changing effect, a stroboscopic effect, a flashing

effect, a coordinated lighting effect, a lighting effect coordinated with a video signal, a lighting

effect coordinated with an audio signal, a color wash where the color changes over a period of

time, an effect creating an ambient color, a color fading effect, an effect that simulates

movement, a color chasing rainbow, a flare streaking across a room, a sun rising, and a plume

from an explosion.

196.   A system of claim 177, wherein illuminating the environment creates an effect, and

wherein the illumination effect is coordinated with an audio effect.

20   197.   A system of claim 177, wherein illuminating the environment is in coordination with

execution of a computer game using the display, and wherein the illumination shows an object

outside a viewport of a virtual world depicted by the computer game.

198. A system of claim 177, further comprising a mapping module for mapping a plurality of lights in the environment with a plurality of objects in the content.

199. A system of claim 177, wherein the content relates to a computer game.

200. A system of claim 199, further comprising an avatar representative of a character of a computer game, wherein the avatar has light as a characteristic.

201. A system of claim 200, wherein the light characteristic of the avatar relates to at least one of light hue, color, intensity, temperature and saturation.

202. A system for illuminating the environment of a display screen, comprising:

an illumination source capable of illuminating an environment with a plurality of colors;

a control system for controlling the illumination source, wherein the control system accepts a signal related to the content displayed on the display screen.

203. A system of claim 202, wherein the control system controls the illumination source in response to the signal.

204. A system of claim 203, wherein the content is a computer application.

205. A system of claim 204, wherein the content is a computer game.

206. A system of claim 205, wherein the illumination source is a plurality of LEDs.

207. A system of claim 206, wherein the LEDS are addressably disposed on a network.

208. A system for providing a control signal for an illumination source, comprising:

content for a computer application including a display on a computer screen;

a control signal adapted to control an illumination system; and

a light system controller for coordinating the control signal with the content.

209. A system of claim 208, wherein coordinating comprises embedding the illumination control signal in computer code for the display on the computer screen.

210.   A system of claim 209, wherein the application is a computer game.

211.   A system of claim 209, wherein the application is a solid modeling program.

212.   A system of claim 209, wherein the application is a simulation.

213.   A system of claim 209, wherein the application is for a computer-based auction.

5   214.   A system for controlling illumination of an environment of a display screen, comprising:

a device for receiving a video-in signal from a content producing device, wherein the device is configured to apply an algorithm adapted to control an illumination system in response to a characteristic of the video signal and to output an illumination control signal that is adapted to control illumination of the environment in coordination with the content of the display on the display screen.

215.   A system of claim 214, further comprising a pass-through video out signal to the display screen.

216.   A system of claim 215, wherein the content producing device is a computer.

15   217.   A system of claim 215, wherein the content producing device is a video game console.

218.   A system for coordinating illumination for a network-based computer game, comprising:

computer game content from a computer network for execution on a computer that is connected to the computer network; and

20   an illumination control signal that is adapted to control an illumination system to illuminate the environment in coordination with the computer game content.

219.   A system of claim 218, wherein the control signal is embedded in the executable code for the computer game content.

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220.   A system of claim 219, wherein the control signal is a digital signal.

221.   A system of claim 220, wherein the control signal is adapted to control the illumination by pulse-width-modulation.

222.   A system of claim 218, wherein the computer game content is for a multi-player game.

223.   A system of claim 222, wherein the illumination control signal instructs the illumination system based on events in the computer game.

224.   A system of claim 219, wherein the illumination control signal instructs the illumination system based on characteristics of objects in the computer game.

225.   A system of claim 224, wherein the computer game content is for a multi-player game, and wherein the illumination control signal controls the illumination system to illuminate an environment of one player in response to an action of a computer of another player.

226.   A system for providing illumination in coordination with a console-based video game, comprising:

        a console-based video game having a content control signal that controls content for display on a display screen;

        a lighting signal for control of a lighting system; and

        a controller for combining the content control signal and the lighting signal to facilitate illumination of the environment of the display screen in coordination with the content displayed on the display screen.

227.   A system of claim 226, wherein the lighting system comprises a plurality of LEDs.

228.   A system of claim 227, wherein the LEDs are disposed in a network.

229.   A system for illumination in a virtual reality environment, comprising:

A display screen for displaying virtual reality content in at least a portion of a virtual reality environment;

a lighting system for illuminating at least a portion of a virtual reality environment; and

a controller for coordinating the illumination with the virtual reality content.

230. A system of claim 229, wherein the virtual reality environment comprises a training application.

231. A system of claim 230, wherein the virtual reality environment comprises a game application.

232. A system of claim 231, wherein the illumination is by control of a network of light emitting diodes of a plurality of colors.

233. An enhancement for a computer-based auction, comprising:

computer code for executing an auction,

a lighting system for illuminating an environment of a participant in the auction, and

a control system for controlling the lighting system in response to data obtained from the auction.

234. A system of claim 233, further comprising a controller for controlling the lights in the environment to provide a change in illumination in response to an event in the auction.

235. A system of claim 234, wherein the controller is adapted to change illumination when the participant wins the auction.

236. A system of claim 235, wherein the controller is adapted to change illumination upon occurrence of an event selected from the group consisting of a higher bid, a new bid, approach of the end of the auction, meeting of a reserve bid, winning the auction, and losing the auction.

237. A system for modeling, comprising:

a computer-based representation of for a solid model, the representation including a

capability for modeling the effect of lights, and

a controller for a light system, the controller adapted to control the light system to

illuminate a solid model in the real environment in correspondence with modeling illumination

5   of the representation in a virtual environment.

238.   A system of claim 237, further comprising a light system for illuminating a solid model.

239.   A system of claim 238, wherein the light system includes a network of LEDs.

240.   A system of claim 239, wherein the LEDs are addressable.

241.   A system for simulating an environment, comprising:

10   a simulation environment corresponding to an environment of a real world situation,

a lighting system for illuminating the simulated environment, and

a controller for controlling the lighting system to illuminate the simulated environment in

a manner corresponding to illumination conditions typical of the real world environment.

242.   A system of claim 241, wherein the environment is an emergency situation, and wherein

15   the lighting system imitates emergency lighting conditions.

243.   A system for teaching music, comprising,

a music-generating system,

a controller for a lighting system, wherein the controller coordinates control of the

lighting system to provide lights that correspond to music played by the music-generating

20   system, and

a feedback system for providing feedback to a user of the music-generating system

through the light system, to assist in training the user to play music.

244. A system for illumination of an environment, comprising:

a display screen for displaying content of a computer application,

a lighting system for illuminating an environment of a user of the computer application,

a surface for receiving illumination for the lighting system, and

a controller for coordinating the illumination of the surface with the execution of content

5   of the computer application.

245.   A system of claim 244, further comprising an element on the surface that interacts with

light from the lighting system to provide an effect.

246.   A system of claim 244, further comprising a mounting bar for mounting lights of the

lighting system for illumination of the surface.

10   247.   A computer-based game, comprising:

a plurality of light elements, the light elements comprising objects of a game, and

a controller, for controlling the light elements in coordination to allow playing of the game, the

light elements being disposed on a surface in an environment external to the computer.

248.   A system for controlling illumination in the environment of a visual display screen,

15   comprising:

an illumination source for producing illumination of a plurality of colors;

a signal related to content that is displayed on the display screen; and

a control system for controlling the illumination source, wherein the control system

controls the illumination source to illuminate the environment in coordination with the content

20   displayed on the display screen.

249.   A system of claim 248, wherein the content comprises objects in a computer game.

250.   A system of claim 248, wherein the illumination source comprises an array of LEDs.

251.   A system of claim 250, wherein the LEDs are configured in a network.

252.   A system of claim 249, wherein the display screen has a housing and wherein the LEDs are disposed on the housing of the display screen.

253.   A system of claim 251, wherein the network is a wireless network.

254.   A system of claim 248, wherein obtaining the signal comprises obtaining code that is embedded in the code for a computer game.

255.   A system of claim 248, wherein obtaining the signal comprises detecting a signal directly from the display screen.

256.   A system of claim 248, wherein obtaining the signal comprises obtaining a video signal through a video in port.

257.   A system of claim 248, wherein the control system delivers a digital signal.

258.   A system of claim 257, wherein the control system delivers a pulse-width-modulated signal.

259.   A system of claim 248, wherein the control system delivers an analog signal.

260.   A system of claim 248, wherein the control system controls the illumination source in relation to a game object in the game.

261.   A system of claim 248, wherein the control system controls the illumination source in coordination with disabling at least one function of the content displayed on the display screen.

262.   A system of claim 248, wherein the display screen is entirely disabled for a period of time in coordination with control of the illumination source.

263.   A system of claim 248, wherein the game object is an event and the illumination source is controlled to produce an effect that is related to the event.

264.   A system of claim 263, wherein the event is an explosion and the effect is a flash.

265.   A system of claim 263, wherein the event is a shot and the effect is a flash.

266. A system of claim 263, wherein the event is success and the effect is a flash.

267. A system of claim 263, wherein the event is approach of a threat and the effect is a color change.

268. A system of claim 263, wherein the event is a change in an object characteristic and the effect is a color change.

269. A system of claim 263, wherein the event is movement and the effect is a wash of color.

270. A system of claim 263, wherein the event is movement and the effect is movement of color.

271. A system of claim 248, further comprising a library of effects from which a programmer may select an effect to relate to an event in the game.

272. A system of claim 271, wherein the library of effects includes effects selected from the group consisting of color-changing effects, stroboscopic effects, flashing effects, coordinated lighting effects, lighting effects coordinated with video, lighting effects coordinated with audio, color wash effects, changes in hue, changes in saturation, changes in intensity, creating an ambient color, color fading, effects that simulate movement, color chasing rainbows, a flare streaking across a room, a sun rising, and a plume from an explosion.

273. A system of claim 248, wherein the content is a game that provides a third person view and wherein the lighting system provides illumination that is an extension of the content displayed on the screen.

274. A system of claim 248, wherein the illumination source is controlled in coordination with a non-game object.

275.   A system of claim 274, wherein the non-game object is selected from the group

consisting of the time of day, the end of the work day, the beginning of the work day, the

beginning of a lunch period, sunset, sunrise, and an environmental condition.

276.   A system of claim 248, wherein the controller controls the illumination source to distract

the user of the content.

277.   A system of claim 248, wherein the controller controls the illumination source to deter

the user of the content.

278.   A system of claim 248, further comprising a detector for detecting a real world condition.

279.   A system of claim 278, wherein the controller alters execution of the computer

application based on the detection of the real world condition.

280.   A system of claim 248, further comprising a surround sound speaker system in proximity

to the user of the display screen, wherein the event is movement and the effect is movement of

color in coordination with movement of sound in the surround sound speaker system.

281.   A system of claim 248, further comprising a surface located in proximity to the display

screen for receiving illumination from the illumination source.

282.   A system of claim 281, wherein the surface comprises an enclosure surrounding the

display screen.

283.   A system of claim 282, wherein the surface comprises a cabana.

284.   A system of claim 281, wherein the surface comprises a white surface.

285.   A system of claim 281, wherein the surface comprises a graphical element that is adapted

to be illuminated by the illumination source.

286.   A system of claim 285, wherein altering the illumination from the illumination source

creates an animation effect with the graphical element of the surface.

287. A system of claim 281, wherein the surface comprises a textured surface.

288. A system of claim 248, further comprising an audio system for producing sound that is related to the content.

289. A system of claim 288, wherein the controller controls the illumination source to illuminate the environment of the display screen in coordination with the sound produced by the audio system.

290. A system of claim 289, wherein the audio system comprises speakers and the network of LEDs is disposed in proximity to the speakers.

291. A system of claim 290, wherein the LEDs are disposed on the speakers.

292. A system of claim 248, wherein the display screen is a first display screen and the environment is a first environment, further comprising

a second display screen in a second environment, and

a second illumination source, wherein the controller controls the illumination sources to

coordinating illumination of the two environments in conjunction with the content displayed on the first and second display screens.

293. A system of claim 248, further comprising a mapping module for mapping a plurality of lights in the environment with a plurality of objects in the content.

294. A system of claim 293, wherein the mapping module maps a plurality of lights in a home to a plurality of lights in a virtual environment depicted on the display.

295. A system of claim 294, wherein the controller illuminates house lights in coordination with the virtual lights.

296. A system of claim 292, wherein the controller changes illumination in the second environment in coordination with content on the first display screen.

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297. A system of claim 296, wherein the first display screen and the second display screen display content for a multi-user computer game, and wherein the illumination of the first environment and the second environment is coordinated in response to objects in the computer game.

298. A system of claim 297, wherein an event on the first display screen causes an illumination change in the second environment.

299. A system of claim 249, further comprising a mounting bar for mounting lights of the lighting system.

300. A system of claim 248, further comprising a cabana for surrounding the display screen.

301. A system of claim 300, wherein the cabana is collapsible.

302. A system of claim 248, further comprising providing an indicator light that is disposed in proximity to the display.

303. A system of claim 302, wherein the indicator is used to indicate a condition.

304. A system of claim 303, wherein the condition is selected from the group consisting of the health of a person, the strength of a shield, and a fuel level.

305. A system of claim 304, further comprising a detector for detecting data from the real world to influence at least one of an event, an object and an attribute in the virtual world in coordination with control of the lighting system.

306. A system for facilitating illumination control, comprising:

    a control system for an illumination source, wherein the control system is adapted to receive a signal representative of visual content displayed on a display screen; and

    a system for receiving the signal.

307. A system of claim 306, wherein the display screen is a computer screen.

308.   A system of claim 307, wherein the content is computer game content.

309.   A system of claim 308, wherein the display screen is a television screen.

310.   A system for allowing a software developer to include control of a lighting system

within a software application comprising:

5   a lighting system substantially similar to one provided to a user; and

an interface for allowing the lighting system to communicate with a computing device; wherein

the software developer can use the interface to include control for the lighting system within a

software application.

311.   A system of claim 310, further comprising a library of effects that can be used to

10   generate a particular lighting effect on the lighting system to the software developer.

312.   A system for providing illumination in coordination with a display screen, comprising:

a source of computer game content for display on a display screen;

an illumination source for illuminating an environment that is related to the display

screen;

a control system for controlling the illumination source to provide illumination of a

15   plurality of colors; and

a controller for coordinating the illumination source to illuminate the environment in relationship

to the computer game content on the display screen, wherein coordinating the illumination

source uses the control system in response to a signal obtained from the computer game.

20   313.   A system of claim 312, further comprising a surface in the environment of the display for

accepting illumination from the illumination source.

314.   A system of claim 313, wherein the surface comprises an enclosure.

315.   A system of claim 314, wherein the enclosure is collapsible and portable.

316. A system of claim 315, wherein the surface comprises elements suitable for interacting with the illumination from the illumination source.

317. A system of claim 316, wherein the elements comprise graphical objects related to objects in the computer game.

5 318. A system of claim 312, further comprising a mounting apparatus for the illumination source.

319. A system of claim 318, wherein the mounting apparatus is collapsible.

320. A system of claim 312, wherein the illumination source comprises a plurality of light emitting diodes.

10 321. A system of claim 320, wherein the light emitting diodes are disposed in a network configuration.

322. A system of claim 321, wherein the light emitting diodes are controlled by pulse width modulation.